IS THE MORTALITY AFTER GYNECOLOGICAL OPERATIONS AFFECTED BY SEASON?

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The writer was led to seek the true answer to this question purely from a personal desire to compare his early teachings in gynecology with the experience of others who had been trained in different schools. The fact that a careful review of the records of a single institution with which he is connected, devoted exclusively to gynecological work, showed that between the years 1880 and 1890 nearly one-fourth of the whole number of deaths occurred during the months of February, March, and April, and that in the majority of the cases these were due to sepsis, seemed to confirm the view that the spring was a season peculiarly unfavorable for operations.

In order to test this theory, the following questions were addressed to a number of specialists in this country and abroad:

"1. Have you noted any increase in your mortality, either in hospital or private practice, during any particular month or months?

"2. If so, do you attribute this fact to climatic influences, or to the greater prevalence of sepsis at the season in question?

"3. Have you ever suspended, or limited, your operative work during any month or months because of the increased mortality?"

Of the two hundred gentlemen to whom circulars were sent over one-half replied, among them the most prominent

gynecologists here and abroad. The writer takes occasion to acknowledge the uniform courtesy which marked the replies, some of which were at considerable length, and will be referred to later. To the first and second questions one hundred replied decidedly in the negative. The majority of these also gave a negative reply to the third question; the others uniformly stated that they suspended their operative work during the summer, but *not* because they feared any worse results at this season. Only fifteen answered the first question in the affirmative, twelve mentioning the months of February and March, two January, and one the late summer. It is significant that not a single operator had noticed any difference in the mortality in private practice, so that we may confine our attention entirely to hospital cases.

Four believed that the increased mortality was due purely to atmospheric influences, eleven to the greater prevalence of sepsis, and four to a combination of both. Two well-known American gynecologists believed there was a greater tendency to pelvic inflammation during February and March. A few were inclined to attribute the increase of sepsis to the greater "humidity," "constitutional depression," "greater liability to catching cold," but the majority expressed, either directly or by inference, the view that hospitals were apt to be in a less perfect sanitary condition during the late winter and early spring.

Only six replied to the third question in the affirmative, and of these one limited his abdominal surgery alone, and two had no fixed rule with regard to it. Two gentlemen, who had formerly found it necessary to limit their work during the months in question, had observed that since they had adopted strict antiseptic precautions there had been no difference in the results at any particular season.

Some of our most prominent operators still showed the influence of their former belief in atmospheric influences by expressing a "general preference for other months," at least

in cases of laparotomy, though without any well-defined reason.

It should be stated that many prominent American surgeons suspend their abdominal work (especially in private practice) during the summer; a few because they fear the depressing effect of the hot weather, but the majority because they take their vacations at this time of the year. The results, as shown by hospital statistics, are as good as they are during the winter.

Several gentlemen, who have had a large experience in obstetrics as well as in gynecology, called attention to the fact that puerperal fever was formerly more prevalent during the early spring, but that under modern precautions the influence of season had been shown to be *nil.* As Dr. Emmet pointed out twenty years ago, there was an intimate relation between these outbreaks and increased mortality in surgical wards, which is readily explained in the light of our present knowledge of the transmission of septic germs.

It is evident that this brief study has yielded less results than the writer anticipated at the outset. There is such a unanimity of opinion in the negative that no room is left for discussion. Even the few who seem to recognize seasonal influences either present no good reason for their opinion, or admit that sepsis is after all the real factor; while the half-dozen who limit their operations during the early spring, do so more from a laudable desire to give their patients the possible benefit of a more favorable season, than from a clearly defined belief that operative work is contra-indicated on account of the time of the year. All the laparotomists of widest experience are ranged on the side of those who hold that atmospheric influences have nothing to do with the results of gynecological operations. Many of these admit that they once leaned to this belief, but that during the past five or six years—that is, since the general adoption of antiseptic methods—they have entirely abandoned this idea. Still, it must be admitted that all surgeons (sometimes by

force of their surroundings) are not equally strict in their precautions in hospital practice, so that they may continue to have epidemics of sepsis, which seem to be most prevalent at certain times of the year. These will, doubtless, soon be eliminated even by the most conservative.

The writer's experience agrees with that of the few gentlemen who have noted an increase in the mortality after gynecological operations in hospital practice during February and March, and who believe that it is due to the greater prevalence of sepsis at this season. That peculiar atmospheric conditions have any special influence he does not believe, except so far as they may favor the development of occasional acute pulmonary complications. The fact that there may be unhealthy seasons (as during an epidemic of influenza) does not alter the case in the least. It is a significant fact that several of the gentlemen who replied at length to the above queries, acknowledged that they formerly regarded the spring as especially unfavorable for operative work, but since the introduction of modern aseptic and antiseptic precautions they had entirely abandoned this view.

It may be taken for granted, then, that according to the general opinion sepsis is the cause, and the only cause, of a relatively greater mortality in hospitals during any particular season, and especially during the spring.

Is there any foundation for the belief that this sepsis is due to the season itself? Is "humidity," or "constitutional depression," or "a greater tendency to pelvic inflammation" a prominent etiological factor during February and March? Is there any truth in the idea that epidemics of puerperal fever and infectious diseases being more prevalent in the early spring, therefore gynecological operations (especially major ones) are attended with greater risk? The accumulated evidence must lead us to reply in the negative. Granted that according to the older writers the system is more depreciated at this time of the year, that does not affect the development of sepsis, though the patient may sometimes be less able to

resist it on account of such depreciated vitality. But, from what we now know of the causes and prevention of septic infection, it is impossible to understand why it should be more dreaded at one time than at another. With regard to the coincidence of epidemics of puerperal fever and increased mortality after operations, we can only add that the former have become things of the past, their disappearance being simultaneous with the intelligent application of antiseptic principles to gynecology as well as to obstetrics. The precautions adopted by modern laparotomists effectually guard against the danger from epidemics of other infectious diseases, such as erysipelas, diphtheria, or scarlatina. It follows that any increase in sepsis is due to a failure to guard against it, either by the elimination of sources of infection, or by the adoption of proper precautions during the operation. That such sepsis is most prevalent in some hospitals in which instruments and operating-rooms are in constant use by several operators, with different assistants and groups of spectators, is clearly due to the fact that after a busy winter, when such operating-rooms and wards are more or less infected, there succeed two or three months (which are always active ones) in which antiseptic precautions are relaxed. Warned by increased mortality, fresh precautions are taken, and, with greater cleanliness, the results during succeeding months again return to the usual standard. We need not go farther for an explanation; it is perfectly simple. As Dr. Bantock pertinently remarks in a personal letter to the writer: "When I lose a case I can always account for the result by one of three things, viz., something that I have done, something that I have omitted to do, or something that it was impossible to do." In short, the time is past when we need to interrogate the earth or the air for the causes of death after operation which lie within ourselves, and, so far as regards its influence, we may be indifferent as to whether the month is October or March.